

# JOURNAL CONTENTS

Volume 42, 1963

	<i>Page</i>	<i>Page</i>
<b>January</b>		
"A Very Happy New Year To You!" by the President of the Institution	1	
<i>The 1962 Viscount Nuffield Paper</i>		
"The Effects of Fluctuation in Labour Requirements on Industrial Labour Relations in South Wales" by W. F. Cartwright, D.L., J.P., M.I.Mech.E.	3	
Discussion	12	
<i>Non-Destructive Testing Symposium</i>		
"A Survey of Standards Incorporating Non-Destructive Testing Requirements" by H. C. Cotton	17	
What Additional Standards are Needed in Non-Destructive Testing?		
"Shipbuilding and Steel" by W. S. Brown	30	
"Non-Ferrous Metals" by F. R. Bareham	36	
"Pressure Vessels" by R. W. Dudley, M.I.E.I.	40	
Planning a New Factory—Report of London Graduate Weekend School	48	
Institution Notes	50	
News of Members	53	
Diary for 1963	55	
Notice of Annual General Meeting, 1963		
Minutes of Annual General Meeting, 25th January, 1962	56	
Report of Council, 1st July, 1961 - 30th June, 1962	56	
Election of Members to Council, 1962-1963	58	
<b>February</b>		
The Annual Dinner, 1962	69	
<i>The 1962 James N. Kirby Paper</i>		
"Multi-Purpose Water Conservation Development Projects in U.S.A., U.S.S.R., and Australia with Special Reference to the Snowy Mountains Scheme" by Sir William Hudson, K.B.E., B.Sc.(Eng.), LL.D.(Hon.), M.I.C.E., Hon.M.I.E.Aust.	77	
<i>Non-Destructive Testing Symposium</i>		
What Additional Standards are Needed in Non-Destructive Testing? (continued)		
"Mass Production" by J. B. Williams	84	
"Aircraft" by K. R. Wilson, A.R.I.C., A.I.M.	88	
"Aircraft Engines" by W. G. Cook, B.Sc.	91	
<i>S.E. Region Graduate Prize Paper</i>		
"Dust-Free Conditions for Missile Manufacture" by P. E. Roake, A.M.I.Prod.E., A.M.I.E.I.	95	
<i>Section Paper</i>		
"Computer Applications to Factory Control Problems" by J. H. Russell, B.Sc., G.I.Mech.E., Grad.I.Prod.E.	104	
A Visit to Northern Italy reported by J. H. Winskill, M.I.Prod.E.	113	
Diary for 1963	115	
Institution Notes	116	
News of Members	119	
<b>March</b>		
So We are Not Going to Market by the President of the Institution	121	
<b>April</b>		
<i>The 1962 Sir Alfred Herbert Paper</i>		
"Lighting and the Production Engineer" by W. Robinson, B.Sc.(Tech.), A.M.I.E.E., F.I.E.S.	123	
Report and Discussion		139
"Maximum Production—Minimum Cost Via Value Analysis" by N. Taylor		147
"National and International Steel Standards" by W. Barr, O.B.E., A.R.C.S.T., F.I.M.		151
Engineering Metrology at the National Engineering Laboratory		156
PERA Newsletter		159
A Visit to Germany reported by T. Forres, Grad.I.Prod.E.		161
Production Engineering Prospects in Peru by R. N. Marland, B.Sc., A.M.I.Mech.E., M.I.Prod.E.		166
Correspondence		168
Membership Elections and Transfers		169
Institution Notes		171
Diary for 1963		172
News of Members		173
Hazleton Memorial Library—Additions		175
<b>May</b>		
Productivity and the Engineer		237
<i>Joint I.Mech.E./I.Prod.E. Conference Papers</i>		
"Engineers as Managers" by H. P. Barker, M.I.E.E., M.I.Mech.E., M.Inst.Gas.E., M.Inst.T., F.B.I.M.		238
"Money and Manufacture" by D. L. Nicolson, M.Inst.N.A., M.I.Mech.E., M.I.Prod.E.		243
"Man and Industry" by W. B. D. Brown, M.B.E., F.B.I.M., and A. C. Main, B.Eng., M.I.E.E., M.I.Mech.E., M.I.Prod.E.		248

<i>Page</i>	<i>Page</i>		
"Design and Productivity" by H. G. Conway, M.A., M.I.Mech.E. ....	259	"Engineering Applications of the Rodolite" by R. J. Tillen ....	462
"Productivity Through Measurement" by James M. S. Risk, B.Com., Ph.D., F.B.I.M. ....	282	"Biomechanics and The Production Engineer" by D. S. Ross, B.Sc., Ph.D., A.R.C.S.T., A.M.I.Mech.E., A.M.I.Prod.E., A.M.Inst.R. ....	479
"O.R. in Theory and Practice" by Professor N. A. Dudley, Ph.D., M.I.Prod.E. ....	288	Some Testing Instruments Developed by the Wool Industries Research Association ....	488
Correspondence ....	293	"Materials Handling and the Production Engineer" by L. J. Hoefkens, A.I.Prod.E. ....	492
Institution Notes ....	295	Correspondence ....	494
Diary for 1963 ....	297	"The Use of Visual Aids at Lecture Meetings" by L. S. Powell ....	495
News of Members ....	298	Institution Notes ....	498
Hazleton Memorial Library—Additions ....	299	News of Members ....	500
<b>June</b>			
Valediction by the President of the Institution ... <i>Joint I.Mech.E./I.Prod.E. Conference Papers</i>	301	Metal to Metal Bonding—a bibliography, 1960-63 Compiled by M. L. South, B.A., F.L.A. ....	501
"Research for Productivity" by Dr. D. F. Galloway, B.Sc., M.I.Mech.E., M.I.Prod.E., and R. A. P. Morgan, O.B.E., M.I.Mech.E., A.M.I.H.V.E. ....	305		
"Engineers and Marketing" by R. Craig Wood ....	317		
"Large Quantity Production" by F. Griffiths ....	321		
"Small Quantity Production" by S. Radcliffe, M.I.Prod.E. ....	327		
"Today's Challenge to Production Management" by B. H. Dyson, F.B.I.M., M.I.Mech.E., M.I.Prod.E. ....	340		
"Quality and the Purchaser" by J. Murray Grammer, M.I.Gas.E., M.Inst.F., A.M.I.H.V.E., A.I.Mech.E. ....	347		
The Production Engineer in a Changing Society—An Address by Mr. Harold Burke ....	349		
The Department of Scientific and Industrial Research—A Profile ....	353		
PERA Newsletter ....	355		
Membership Elections and Transfers ....	358		
Institution Notes ....	360		
Diary for 1963 ....	361		
News of Members ....	362		
Hazleton Memorial Library—Additions ....	363		
<b>September</b>			
	305	A Time of Significance by the President of the Institution ....	509
	317	"Productivity of Materials" by J. Rawicz-Szczerbo, B.Sc., M.Sc., A.M.I.E.E., A.M.I.Prod.E. ....	510
	321	"The Machine as a System Element" by A. R. Styles, Grad.I.E.E. ....	517
	327	"The Influence of Vibrations on Quality in Grinding" by G. H. Farnworth, M.Sc.Tech., A.M.I.Mech.E., A.M.I.Prod.E. ....	525
	340	"Some Developments in Plastic Tooling" by J. S. King, B.Sc. ....	539
	347	"The Quality Factor in Productivity" by T. M. Carter, F.C.W.A. ....	546
	349	"Selection and Training of Supervisors" by Owen S. Hiner ....	552
	353	Correspondence ....	557
	355		
	358		
	360		
	361		
	362		
	363		
	363	<i>The 1962 Lord Austin Prize Essay</i>	
		"The Contribution of the Technician (As Distinct from the Technologist and Craftsman) to Production Engineering" by B. Hitchings, Grad.I.Prod.E. ....	558
		Standards and Productivity—Ninth Annual Conference of Standards Engineers ....	561
		"Education and Training of Production Engineers in South Africa" by F. W. Cooper, B.Sc., M.I.Mech.E., M.I.Prod.E. ....	564
		Practical Aspects on the Teaching of Mechanical Engineering Technicians ....	569
		PERA Quarterly Newsletter ....	571
		Institution Notes ....	573
		News from the Education and Membership Department ....	576
		News of Members ....	577
		Diary for 1963-1964 ....	580
<b>October</b>			
	406	An Appreciation of Lord Nuffield by The Rt. Hon. the Lord Sempill, A.F.C., M.I.Prod.E. ....	581
	426	"Data Controlled Milling" by W. R. Price, A.M.I.Prod.E. ....	582
	431	"Powder Metallurgy in Industry" by G. Spriggs, A.I.M. ....	607
	433	"The Use of Laminated Plastics" by J. H. Golding ....	620
	435	"A Quality Scheme for the Bronze Foundry Industry" by B. R. Higgins, B.Sc., A.M.I.Mech.E., A.M.I.Prod.E., M.I.B.F., F.I.D., M.Inst.M. ....	631
	436	"I am Going to be the Future Executive" by W. H. Telling ....	637
	438	Membership Elections and Transfers ....	647
	440	Correspondence ....	649
	441	Diary for 1963-1964 ....	650
	443	Institution Notes ....	651
		Tribute to Mr. E. Percy Edwards ....	652
		News from the Education and Membership Department ....	653
		News of Members ....	654
<b>August</b>			
Professionalism			
A Paper prepared by the Secretariat of The Engineering Institutions Joint Council ....	445		
"Economics of Machine Tool Replacement" by R. G. Nicholas, A.M.I.Prod.E. ....	451		

November	Page	December	Page
Leonardo da Vinci Lecture to The Institution of Mechanical Engineers by R. Ratcliffe, C.B., M.B.E., M.I.Mech.E., M.I.Prod.E. ....	657	Presidential Address to South African Council Dinner ....	733
"The Training and Technical Education of Craftsmen and Technicians in the U.S.S.R." by J. W. Longden, A.M.I.Mech.E., M.I.Prod.E., M.I.E.I., A.M.I.Ag.E. ....	660	"Critical Path Scheduling" by D. E. Greene, M.I.Prod.E., M.B.I.M. ....	736
"An Experimental Investigation into the Honing Process" by D. Wooldridge, M.C.T., A.M.I.Mech.E., A.M.I.Prod.E. ....	691	"Production Flow Analysis" by John L. Burbidge, A.M.I.Mech.E., M.I.Prod.E., M.B.I.M. ....	742
Correspondence ....	718	"Progress in Plastics—Their Use in Engineering" by V. E. Yarsley, D.Sc.(Tech.), M.Sc., M.I.Chem.E., F.R.I.C., F.P.I., Hon.A.C.T.(B'ham.) ....	753
"Controlled Advance" by A. P. Oppenheimer, B.Sc.(Eng.), A.M.I.Prod.E. ....	719	Design-Production Liaison—an aide-memoire ....	766
Institution Notes ....	724	PERA Quarterly Newsletter ....	777
News from the Education and Membership Department ....	725	Membership Elections and Transfers ....	779
Diary for 1963 - 1964 ....	725	Institution Notes ....	781
Obituary — Dr. Herbert Schofield, C.B.E., Hon.M.I.Prod.E. ....	726	News from the Education and Membership Department ....	783
News of Members ....	728	News of Members ....	784
Hazleton Memorial Library—Additions ....	732	Journal Contents, Volume 42, 1963 ....	787
		Subject Index to Material Published, 1963 ....	789
		Author/Title Index to Material Published, 1963 ....	793

## Subject Index to Material Published, 1963

*(Full particulars under author in author/title index)*

ADHESIVES for Metals.  
South. August.

AIRCRAFT ENGINE MANUFACTURE: Testing, Non-Destructive: Standards.  
Cook. February.

AIRCRAFT MANUFACTURE: Testing, Non-Destructive: Standards.  
Wilson. February.

AUSTRALIA: Telecommunication Equipment Manufacture.  
Lord. April.

AUSTRALIA: Water Conservation.  
Hudson. February.

AUTOMATIC CONTROL, (Related Heading: Automation.)  
Eltenton. July.

AUTOMATIC CONTROL: Machine Tools.  
Styles. September.

AUTOMATIC CONTROL: Machine Tools: Milling Machines.  
Price. October.

AUTOMATION, (Related Heading: Automatic Control.)  
Caldecote. July; Ratcliffe, November; Sargrove. July.

BATCH PRODUCTION.  
Radcliffe. June.

BIOMECHANICS.  
Ross. August.

BONDING; Metals: Bibliography.  
South. August.

BONDING, Structural: Bibliography.  
South. August.

BRONZE AND BRASS FOUNDRIES: Quality Control: Certificate Schemes.  
Higgins. October.

CAESIUM CLOCK: National Physical Laboratory. Millard.  
(Letter commenting on Loxham. April.)

CERTIFICATE SCHEMES: Quality Control.  
Higgins. October.

CITY AND GUILDS OF LONDON INSTITUTE: Syllabuses.  
London Education Discussion Group. September.

CLEAN CONDITIONS: Missile Manufacture.  
Roake. February.

COMMITTEES OF THE INSTITUTION: Standards Committee.  
Standards Committee.

COMMUNICATION.  
Higham. April with letters from Yardley and Gibbins.  
July and October.

COMPUTERS: Control of Machines. (See Automatic Control.)

COMPUTERS: Production Control Applications: Machine Shops.  
Russell. February.

COMPUTERS: Simulation by: Machine Shops.  
Russell. February.

CONTAINERS for Handling: Design.  
Materials Handling Group, Western Section. April.

CONTROL, AUTOMATIC. (See Automatic Control.)

COSTING: Value Analysis  
Taylor. March, with letter from Southall, May.

CRITICAL PATH METHOD.  
Greene. December.

DATA CONTROL OF MACHINES. (See Automatic Control: Machine Tools.)

DAYWORK: Wage Payment Plans. Brown and Main, May, with letter from Willmott. July.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. (See also National Engineering Laboratory; Production Engineering Research Association; Wool Industries Research Association.) The Department of Scientific and Industrial Research.

DEPRECIATION: Machine Tools. Nicholas. August.

DESIGN. Conway. May; Research and Technical Committee. December.

DEUCE COMPUTER. Russell. February.

DIFFRACTION GRATINGS: Metrology. Tillen. August.

DIPLOMAS IN TECHNOLOGY. Diplomas in Technology. July.

DUST FREE CONDITIONS: Missile Manufacture. Roake. February.

EDUCATION, TECHNICAL AND PROFESSIONAL. Brosan. July, with letter from Thomas and reply. August.

EDUCATION, TECHNICAL AND PROFESSIONAL: Automatic Control. Eltenton. July.

EDUCATION, Technical and Professional: Craftsmen: Russia. Longden. November.

EDUCATION, Technical and Professional: Diplomas in Technology. Brosan. July, with letter from Thomas. August.

EDUCATION, Technical and Professional: Production Engineering. Production Engineering as a career. April; Teaching Production Engineering. July.

EDUCATION, Technical and Professional: Production Engineering: South Africa. Cooper. September.

EDUCATION, Technical and Professional: Supervisors. Hiner. September.

EDUCATION, Technical and Professional: Technicians. London Education Discussion Group. September.

EDUCATION, Technical and Professional: Technicians: Russia. Longden. November.

EDWARDS, E. Percy. Tribute to. October.

ELECTRIC PROCESS HEATING. Sharples. July.

EMI MACHINE TOOL CONTROL SYSTEM. Price. October.

ENGINEERING: Orthopaedic Surgery. Ross. August.

ENGINEERS: Function. (See also Production Engineers: Function.) Hogg (Hailsham). July.

ENGINEERS: Registration. Engineering Institutions Joint Council. August.

ENGINEERS AS MANAGERS. Barker. May.

EXECUTIVES: Development. Telling. October.

FACTORIES: Moving. London Graduate Weekend School. January.

FACTORIES: Planning. London Graduate Weekend School. January.

FERRANTI MACHINE TOOL CONTROL SYSTEM. Price. October.

FERROUS METALS: Testing, Non-destructive: Standards. Brown. January.

FINANCIAL MANAGEMENT. Nicolson. May.

FITS AND TOLERANCES. Wittenberg. (Letter) September, and Willmott (Letter,) November commenting on Dyson. June.

FOREMEN—Education. Hiner. September.

FOUNDRIES: Bronze and Brass: Quality Control. Certificate Schemes. Higgins. October.

GERMANY, Federal Republic of: Industry. Forres. March.

GRINDING: Vibrations. Farnworth. September.

HONING. Wooldridge. November.

ILLUMINATION, Industrial. Robinson. March.

INCENTIVES, Wage. Brown and Main. May, with letter from Willmott. July.

INDUSTRIAL RELATIONS: Wales. Cartwright. January.

INDUSTRY: Germany, Federal Republic of. Forres. March.

INDUSTRY: Italy. Winskill. February.

INDUSTRY: Northern Ireland. Burke. June.

INDUSTRY: Wales. Cartwright. January.

INSTITUTION POLICIES AND ACTIVITIES. Burke. January; March; June; Ratcliffe. September; December.

INSTITUTION STANDING COMMITTEES: Standards. Standards Committee. July.

INSTITUTIONS, Professional: Function. Hogg. (Hailsham). July.

IRELAND, Northern: Industry. Burke. June.

IRON AND STEEL. (See Ferrous Metals.)

ISRAEL: Quality Control. Spira. July.

ITALY: Industry. Winskill. February.

LABOUR RELATIONS: Wales. Cartwright. January.

LABOUR SUPPLY: Wales. Cartwright. January.

LAMINATED PLASTICS. Golding. October.

LARGE QUANTITY PRODUCTION. Griffiths. June.

LECTURING TECHNIQUES: Visual aids. Powell. August.

LIGHTING, INDUSTRIAL. Robinson. March.

MACHINE SHOP LOADING, Computerized. Russell. February.

MACHINE SHOPS: Production Planning and control, Computerized. Russell. February.

MACHINE SHOPS: Simulation by computer. Russell. February.

